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Attitude Change as a Function of Media Presentation: An Inquiry Into the Effects of Source Monitoring

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ATTITUDE CHANGE AS A FUNCTION OF MEDIA PRESENTATION:
AN INQUIRY INTO THE EFFECTS OF SOURCE MONITORING

by
Thomas A. Watkins

A Thesis Submitted to the Faculty of the
Graduate School of Loyola University
of Chicago in Partial Fulfillment of
the Requirements for the Degree
of Master of Arts
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ABSTRACT

In a 2 by 2 factorial design which varied manner of presentation (live or videotaped) and the presence or absence of the monitoring variable, subjects were exposed to a persuasive communication which argued against the use of chest X-rays for the detection of TB. Data were gathered concerning the subjects recall of the message, evaluation of the message, evaluation of the source, and final attitude on the target issue. Results indicated that monitoring had no significant effect but that the videotaped presentation was superior to live presentation in eliciting greater attitude change. Results are discussed in terms of subjects' differential evaluation of the source as a function of manner of message presentation.

LIFE

Thomas A. Watkins was born in Chicago, Illinois, May 14, 1947. He graduated from Weber High School, Chicago, Illinois, in June, 1965. He received the degree of Bachelor of Science, Honors, magna cum laude from Loyola University of Chicago in June, 1969.

The author began his graduate studies at Loyola in September, 1969.

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CHAPTER I

INTRODUCTION

During the past twenty years we have all been witness to a remarkable upsurge in the development and utilization of electronic means of communication and persuasion. Seemingly, no sector of contemporary society has been left uninfluenced by the introduction of tape recorders, television, videotape recorders, the movie camera, and most recently, telephones which transmit visual as well as aural information. A great deal of popular writing has suggested that this profusion of communication channels has had and will continue to have an important and systematic effect on the way people think, perceive, feel, and behave. This notion is in good measure attributable to the writings of McLuhan (1964, 1967) and his disciples who have insisted on the pervasive influence of media in contemporary society. There are many who would disagree with the arguments of McLuhan, but the fact remains that diverse segments of the populace are spending more time influencing and being influenced by electronic means of communication.

A good example of the above trend is found in the field of education which has consistently evidenced an

increasing amount of reliance on televised instruction. In reference to this phenomenon, Goldman (1964) reported that eighty cities in the United States have educational TV stations, most of which devote a substantial portion of their programming to in-school broadcasting. The current number of cities utilizing televised instruction is well over the one hundred mark indicating a persistent increase in reliance on electronic instruction. Given this increase and the vast economic commitment it entails, a question of great importance is the extent to which educational objectives may be achieved through televised instruction.

Orr (1966) reported that there is indeed a controversy among experts as to whether or not televised instruction is effective. The importance of this controversy is underscored by the periodic conferences sponsored by the National Education Association. The main objective of these conferences is to promote research on the use of televised instruction in order to better understand its effects and potential applications.

A brief examination of the literature on televised instruction (e.g., Goldman, 1964; Gula, 1961; Jantzen, 1965) reveals an astonishing lack of references to controlled empirical studies of media influence. It would seem that practical decisions concerning the use and evaluation of instructional aids could be based on reliable scientific findings. The present thesis, although not directly related to televised instruction, was designed to investigate the

differential impact inherent in different media presentations. It is concerned with the phenomenon of persuasion rather than education, but its findings may have significance beyond the specific area of persuasion effects. (e.g., Which of a variety of media leads to greatest recall of content? Is a communicator perceived differently when he appears on different media?) The present study is concerned with differing amounts of attitude change evoked by a live versus a videotaped source of a communication and the underlying mechanisms which might explain this difference.

Turning to the psychological literature, one finds that considerable effort has been expended with investigating the impact of various media presentations on attitude change. An early study conducted by Peterson & Thurstone (1933) indicated that motion pictures could effect changes in attitude on a variety of topics. An additional set of findings suggested that two or more films which are thematically related may have a superior impact relative to a single film. Hovland, Lumsdaine, & Sheffield (1949) also supported the notion that filmed presentations of persuasive messages can effect attitude change. The results of their study reinforce the Peterson & Thurstone findings by suggesting that repeated presentations which differ in content but maintain the same theme are the most effective mediators of attitude change. In 1958, McGinnies, Lana, & Smith again found filmed presentation to be effective

in changing attitudes with the target issue being mental health and the community. A study of Rosen (1948) provided evidence that anti-Semitic attitudes could be changed by using persuasive messages incorporated in a film format.

Weiss (1968) wrote a comprehensive review of the effects of mass-media which generally supports the notion that different channels of communication such as newspapers, radio and television do indeed have the capacity to change the attitudes of specified target populations. The question of relative strengths of the various media, however, was not considered. The problem here is one of determining how various electronic or mass media differ in their ultimate effects when compared with the traditional live communicator.

Schramm (1960) contends that the literature to date fails to suggest a theoretical framework which could account for the varying degrees of change elicited by different media. Part of the difficulty lies in the fact that a majority of experimenters explore only one medium at a time and are therefore not compelled to speculate as to the underlying processes which must account for differential media influence. An exception to this general trend was a recent study performed by Croft, Stimson, Ross, Bray & Breglio (1969) which concerned the differing amounts of attitude change obtained from using live versus videotaped communication sources.

The results of the Croft et al. study indicated that a live communicator elicited more attitude change than a videotaped communicator with the message content held constant in both types of presentation. The authors chose to interpret this result by suggesting that the live communicator gave off more cues than the videotaped communicator and therefore effected more attitude change. More specifically, they enumerated color, three dimensionality, and the ability of the subjects to discriminate facial features better as the factors which accounted for the heightened potency of the live presentation. The entire explanation rested on the assumption that the increased number of cues in the live condition somehow enabled the communicator to "give off more information" than the videotape. Although the objective presence of more cues in the live condition cannot be disputed, two difficulties arise given this explanation: 1.) How do we determine whether subjects are actually picking up more cues in the live condition? and 2.) Past research has contradicted the notion that an increase in cues inevitably leads to a heightened effect on the recipients of the information. Vander Meer (1952) performed an experiment which investigated the relative effectiveness of color versus black and white films used as didactic devices, and found mixed results with the black and white film occasionally superior. A replication of this study was

performed by Fullerton (1956) who concluded that the film with less cues (the black and white film) was decidedly superior in serving as a didactic device than the color film. Taken together, these two studies would seem to weaken the notion that a simple increment in cues, (e.g., from videotape to live presentation), should result in heightened impact and subsequent influence on the subject population. Moreover, these studies further complicate the question by suggesting that an increase in cues may be detrimental to the desired effect.

Another difficulty with the Croft et al. study grows out of the proposal that communicator credibility is enhanced in the live condition because of the relatively greater amount of cues in this condition relative to the videotape condition. Since this study provided no data on the question of communicator credibility as a function of media presentation, this assertion is open to further empirical investigation.

In view of the apparent weakness of the theory proposed by Croft and his associates, it was the two-fold purpose of this thesis to 1.) collect data relevant to the question of communicator credibility as a function of media presentation; and 2.) to investigate an alternative explanation for heightened attitude change to a live source which would at the same time test the effects of media differences with respect to cue content.

In reference to an alternative explanation, it might be noted that the Croft et al. study did not consider the variable of attention to the message being delivered. Previous theory which has dealt with attitude change has characterized attention as the sine qua non of the entire influence process. Of particular relevance here is McGuire's (1969) stochastic model of attitude change which suggests that a message must be "received" before it is yielded to. The particular paradigm put forward by McGuire portrays the attitude change process as a two step phenomenon with "reception" and "yielding" as its major components. Each of these two steps are thought to be differentially affected by a given personality characteristic of the subject. The usual prediction cited in reference to this phenomenon is that high I.Q. subjects have little difficulty comprehending, tending to and "receiving" a communication, but their "yielding gradient" is considerably higher than the low I.Q. subject. Low I.Q. subjects, on the other hand, are highly susceptible to "yielding" but may experience difficulty in paying attention to or comprehending an influence attempt. Of importance to the current issue is the proposition that attention to the message content precede the rest of the steps in the stochastic model of change. Without sufficient attention to, and comprehension of the persuasive message, little yielding to the communication should be expected.

When considered within this framework, the Croft et al. results may be explicable in terms other than those involving differential cue impact and communicator credibility. What is being suggested here is the possibility that a live communicator may elicit more attention from his audience than a videotape of the same communicator.

One major and obvious difference between a videotape playback of a message and an actual person delivering a message is the fact that the person can see his audience where the playback apparatus, of course, cannot. Although this difference was not discussed in the Croft et al. study, it suggests itself as a viable alternative explanation in that the live communicator by virtue of his being able to see and "keep an eye on" his audience could conceivably be effecting higher levels of attention than the simple videotape playback. In short, a human communicator has capacities such as observing his audience which are completely lacking with a videotape presentation procedure. It is suggested that the audience's knowledge of this capacity, the knowledge that they are being "watched" by the communicator, may effect higher levels of attention to the message and therefore higher levels of attitude change. The capacity of a communicator to watch his audience and keep track of their responses will be called the "monitoring capacity."

In the Croft et al. study it is conceivable that while the authors were altering media from videotape to

live, they were also altering the factor of monitoring. The live source was monitoring his audience while the videotape playback was not. The factor of media was seemingly confounded with the factor of monitoring capacity. The purpose of the present research was to conduct a parametric study in which the crucial and relevant comparisons between cue input (inherent in media switches) and monitoring could be made.

Valid and meaningful comparisons could only be made with the introduction of the conditions "live communicator without monitoring capacity" and "videotaped communicator with monitoring capacity." Accordingly, a two by two design was utilized which varied cue input (i.e., manner of presentation with more cues in the live conditions), and presence or absence of monitoring. The resultant four conditions were: 1.) live source with monitoring capacity; 2.) videotape source with monitoring capacity; 3.) live source without monitoring capacity; and 4.) videotape source without monitoring capacity. Conditions 1.) and 4.) were considered to be a replication of the Croft et al. study, whereas conditions 2.) and 3.) permit the relevant comparisons to be made. For the cue increment theory to be supported, a main effect for manner of presentation should occur with greater attitude change for the live presentation. For the monitoring theory to be supported, a main effect for monitoring versus no-monitoring should occur with greater attitude change in the

monitoring conditions.

Based on the assumption that 1.) monitoring will lead to higher levels of attention to a persuasive message than its absence; and 2.) higher levels of attention will mediate greater attitude change than lower levels of attention; the hypotheses of the present study were as follows:

1.) Attitude change will be greater to a live source than to a videotaped source, only when the live source is capable of monitoring while the videotaped source is not.

2.) Attitude change will be greater to a videotaped source, only when the videotaped source is capable of monitoring while the live source is not.

CHAPTER II

METHOD

Overview. Subjects were randomly assigned to one of five conditions. Four conditions consisted of a factorial combination of the factors of type of presentation and presence or absence of monitoring. The fifth condition was a control condition in which the subjects received no experimental manipulation but were required to fill out a checklist.

In each of the experimental conditions, subjects were exposed to a persuasive message which convincingly argued against the use of chest X-rays for the detection of TB. They were then required to complete a booklet of questionnaires designed to measure their posttreatment attitudes and their evaluation of both the message itself and the source of the message.

A debriefing session was held after the experiment to inform subjects of the fictitious nature of the message.

Subjects. The subjects were 100 introductory psychology students at Loyola University who received laboratory credit for their participation in the experiment. The sex composition of each cell was approximately one half male and one half female. Most of the subjects

were freshmen enrolled in a liberal arts program of the university. Due to space limitations in the experimental rooms and the need to maintain a constant distance from the stimulus, the maximum number run at one time was four. In the no message condition, however, subjects were run in larger groups.

Source of Communication. The source of the communication in the experimental conditions was a professional radio announcer who assumed the role of "an expert in the field of chest X-rays." This person was chosen to deliver the message both because of his speaking ability and also because of his scholarly and academic appearance. Statements spontaneously offered by the subjects during the postexperimental debriefing sessions confirmed the expectancy that this stimulus person would indeed be perceived as an "expert in his field."

Materials. Each subject received a booklet containing the following scales and checklists: (1) a fourteen item semantic differential for evaluating the message; (e.g., good-bad; informative-uninformative; authentic-fake; involving-uninvolving) (2) an attitude scale consisting of four fifteen point bipolar scales pertaining to the message content (e.g., "Chest X-rays should be taken regularly and often.") (3) a "fill in the blanks" questionnaire which measured recall of the message (e.g., "A safer alternative to the chest X-ray is the _____.") (4) another attitude scale identical to that described in

(2) which was to be answered from the source's point of view; and (5) a nine point evaluation of the source of the message running from "I would consider him completely incompetent to render an opinion on this matter." to "I would accept his judgment on this matter without question." This last page of the booklet also contained six checklist items which measured the subjects' evaluation of the source on the characteristics of activity (bold-timid; energetic-tired), trustworthiness, and expertness-intelligence.

Subjects in the control condition were given a one-page booklet which contained an attitude scale which measured attitudes toward chest X-rays. A complete set of these experimental materials may be found in Appendix A.

A portable General Electric videotape recorder was used in constructing the tapes which were used in two conditions of the experiment. A special Sony "zoom" lens was used on the camera in order to produce a videotaped image on the monitor which was of the same size as the live stimulus which was used in the two other conditions of the experiment. When communication between the two experimental rooms was necessitated by the design, a Knight amplifier and mixer were utilized along with a microphone and an Allied eight inch speaker system.

Design. The experiment employed a 2 X 2 factorial design which varied the factors of manner of presentation (live communicator versus videotaped communicator) and

presence or absence of monitoring capacity of the source. A fifth cell was composed of subjects who were not exposed to any experimental manipulation but merely filled out the attitude scale.

Procedure. The experiment was conducted in two adjoining rooms which were separated by a six foot by three foot reversible mirror. In the two videotape conditions, the subjects were seated in the same room with a television monitor. In the live conditions the subjects were seated in an "observation" room while the source of the communication was seated in an adjoining room separated from the subjects by the reversible mirror. In all conditions, the subjects were maintained at a ten foot distance from the stimulus. Figures 1 and 2 provide a schematic representation of the source and subject seating arrangements.

In the live source monitoring condition (hereafter referred to as LM) the subjects were seated in the observation room, given the experimental booklets, and then were given the following information about the experiment:

The experiment you are about to participate in is concerned with the effectiveness of certain kinds of lecture formats. During the next five minutes you'll be hearing a prepared statement by Dr. Donald Hoyt who will be speaking to you from the next room. Dr. Hoyt is an expert in the field of chest X-rays and has spent the last five years researching their possible effects on the populace. During this experiment the lights will be left on in this room so that Dr. Hoyt can see you. After you've heard from him you will be required to complete a few checklists concerning what he's had to say.

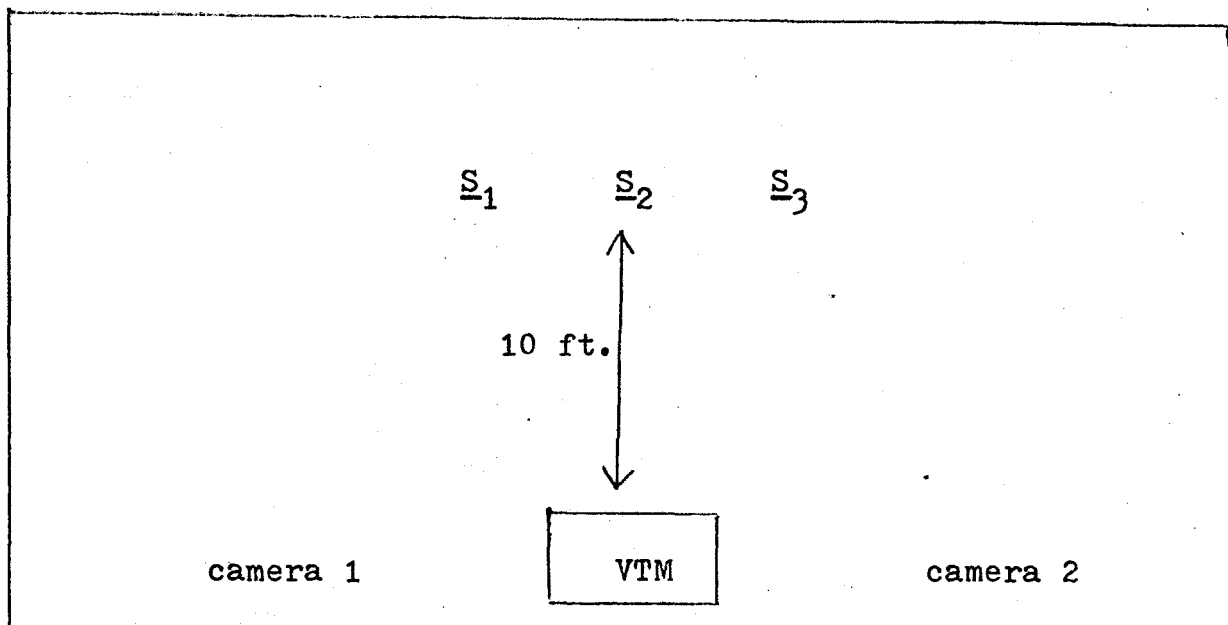


Figure 1. Positioning of videotape monitor, cameras, and \underline{S} s for VTM condition. (Cameras absent in V condition)

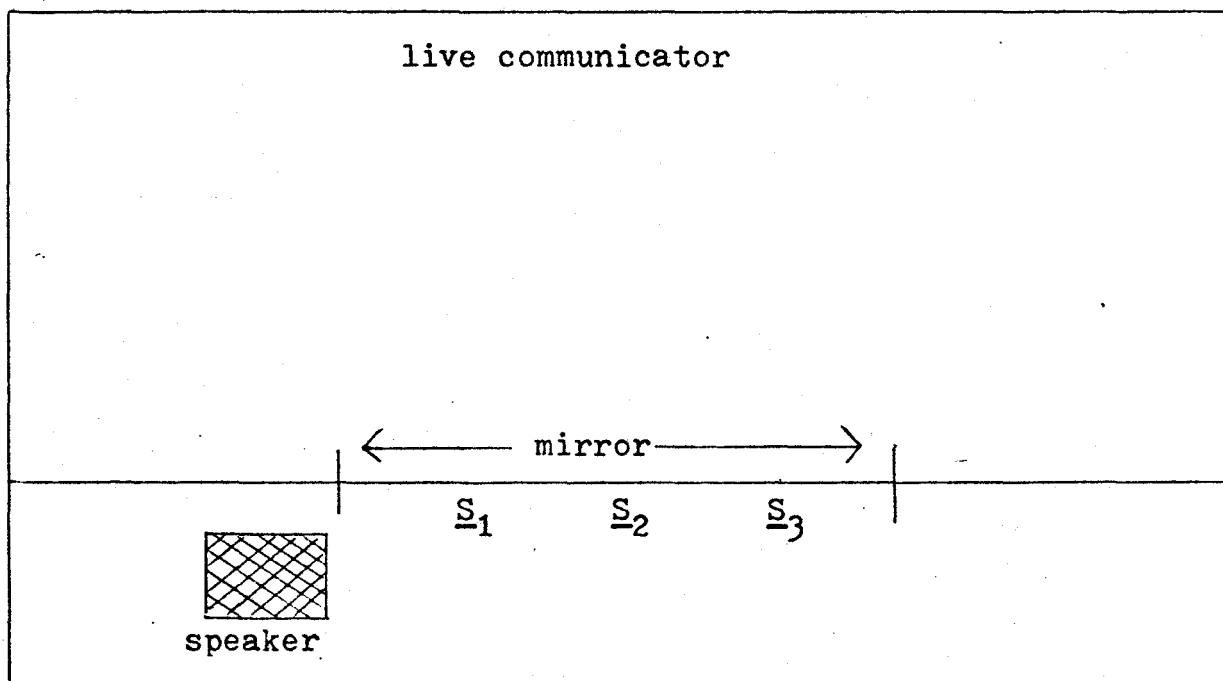


Figure 2. Positioning of communicator and \underline{S} s for live conditions (L & LM).

After delivering these instructions, the experimenter left the observation room, signalled Dr. Hoyt who then entered the next room, sat at a table against the far wall and delivered a four hundred word communication which argued against the use of chest X-rays for the detection of TB.

The persuasive communication began by stating that health authorities have been studying the use of basic tools of health diagnosis and have made recommendations concerning the use of these tools. It goes on to note that increases have been reported in the incidence of leukemia and sterility and links this increase to radiation exposure. Chest X-rays for the detection of TB are mentioned as one of the contributing agents of radiation. The message then catalogues the possible aftereffects of exposure to radiation such as hemophilia and leukemia. This discussion is rather technical and deals with fluctuations in leucocyte count of the blood system.

The next series of arguments suggest that radiation can lead to sterility and gene mutations as well as chromosomal breakdown. Following these arguments mention is made of the "skin test" which can be safely substituted for the dangerous chest X-ray. The concluding arguments are as follows: "...it can be seen that exposure to frequent radiation, including the small amounts of radiation present in the chest X-ray can be very dangerous to health. It can cause leukemia, sterility or birth defects.

Chest X-rays should be taken as infrequently as possible and preferably not at all." The message is reproduced in full in Appendix A.

After the communication was delivered, Dr. Hoyt left the room, the experimenter gave brief instructions on how to complete the experimental booklets and collected them when the subjects were done. A postexperimental debriefing session then took place in which the subjects were informed of the nature of the experiment and the fictitious character of the communication they had just heard. If there were no further questions, the subjects were given credit for their participation in the experiment and then dismissed from the laboratory. All subjects were requested not to speak of the experiment to any of their fellow students.

In the live source-no monitoring condition (hereafter referred to as L), subjects were seated in the observation room and given experimental booklets. The information given them about the experiment was identical to the information given in the LM condition with the exception of their being told that the lights would be turned down in their room thereby preventing Dr. Hoyt from seeing them during his delivery. The experimenter then turned down the lights by means of a rheostat and the communicator delivered the same four hundred word message arguing against the use of chest X-rays for the detection of TB. Upon the conclusion of the communication, the experimenter turned up the lights in the subjects' room,

gave instructions on the completion of the experimental booklets, collected the booklets and conducted a debriefing session.

In the videotape communicator-monitoring condition (hereafter referred to as VM), two cameras were set up on either side of the videotape television monitor which was used for playback of prerecorded tapes. These cameras were positioned so as to be focused on the subjects who were sitting across the room. Both cameras were plugged into wall sockets and both had leads which appeared to be feeding into a master wall socket which led to the observation room. Before the tape of Dr. Hoyt delivering the communication was run, the cameras were switched on (a small red light convincingly glowed on each of them) and the subjects were told that Dr. Hoyt was getting an immediate playback of them in the next room while they were watching him on the monitor and listening to the message. Aside from this information, the instructions and information about the experiment were the same as in the LM and L conditions. Subjects were required to watch a prerecorded videotape of Dr. Hoyt giving the message and then completed the experimental booklets as in the other conditions. Five videotapes were made of the delivery previous to the actual experiment. These were randomly rotated for the various sessions in order to approximate the variability inherent in the live presentation.

In the videotape communicator-no monitoring condition (hereafter referred to as V), subjects merely watched a videotape playback on the monitor and completed the checklists and scales in the booklets. The cameras used in the VM condition were moved to a corner of the room and were unplugged.

In the control condition, subjects were merely asked to indicate their feelings about chest X-rays by completing a one page attitude scale which was identical to that used in the four experimental conditions.

Summary of Experimental Manipulations. (LM): Subjects informed that lights would remain on so that the communicator who was in the next room could see them.

(L): Lights turned down before delivery; subjects informed that the live communicator could not see them.

(VM): Subjects view and listen to playback of tape on television monitor; cameras focused on subjects and turned on; subjects told that communicator is viewing them via an immediate playback in the next room.

(V): Subjects simply watch playback of tape of communicator.

In all the experimental conditions the subjects were told that the experiment was concerned with the effectiveness of various lecture formats. In addition, the source of the communication was always introduced as Dr. Donald Hoyt, an expert in the field of chest X-rays.

CHAPTER III

RESULTS

Attitude Change. The hypotheses which concern attitude change were: 1.) Attitude change will be greater to a live source than to a videotaped source, only when the live source is capable of monitoring his audience while the videotaped source is not; and 2.) Attitude change will be greater to a videotaped source than to a live source when the videotaped source is capable of monitoring while the live source is not.

The major dependent variable of concern was the subjects' posttreatment attitude concerning the target issue of chest X-rays. This was measured on four 15 point bipolar scales in the experimental booklet. Because past research (Johnson & Watkins, 1971) indicated that these four measures are highly correlated, each subject's score was a sum of all his ratings over the four scales. The range of possible scores was therefore from 4 to 60 with a lower score representing more attitude change. A lower score would represent an anti X-ray attitude as implied by the communication, whereas a higher score would represent a pro X-ray attitude. The posttreatment means are reported in Table 1.

TABLE 1

Mean Attitude Change Scores as a Function of
Monitoring and Manner of Presentation

	Monitor	No Monitor	
Live	22.60	22.70	22.65
Video	15.50	19.15	17.32
	19.05	20.92	

All n's = 20; control group mean = 45.25

A one way analysis of variance on these five conditions yielded a significant $F = 25.58$; $df = 4,95$; $p < .001$.* A Duncan's Multiple Range Test performed on the ordered mean differences indicated that all the experimental means were significantly different (i.e., more anti) than the control mean. An examination of the experimental means also indicates that they are all on the anti side of neutrality (32.0) on the attitude scales.

A two way analysis of variance on the four experimental groups without the control group yielded a significant main effect for the factor of manner of presentation ($F = 4.07$; $df = 1,76$; $p < .05$) indicating that

*Complete ANOVA summary tables for all reported analyses given in Appendix B.

there was more attitude change toward the communication in the videotape conditions than in the live conditions. This was an unexpected result which was not predicted by the hypotheses of the experiment. The predicted main effect for the factor of monitoring was not confirmed in the analysis ($F = .50$; $df = 1,76$; $p > .05$).

The interaction between manner of presentation and monitoring was also non-significant ($F = .45$; $df = 1,76$; $p > .05$).

Recall of Message Content. Subjects were required to fill in the blanks of a 30 item recall measure which consisted of incomplete sentences taken directly from the communication. Scores were recorded in percents with higher percentages indicating greater recall of the material. Table 2 reports the means for the four treatment groups.

TABLE 2

Recall of Message Content as a Function of Monitoring and Manner of Presentation

	Monitor	No Monitor	
Live	56.8	60.9	58.85
Video	61.7	57.6	59.65
	59.25	59.25	

Analysis of variance on these data yielded no significant F ratios indicating that recall of the communication was not differentially affected by the various treatment combinations.

Spearman rank order correlations were performed between the subjects' attitude change scores and the recall scores for each cell of the experiment. The correlations are reported in Table 3.

TABLE 3
Correlations Between Recall of Message Content
and Attitude Change Scores

	Monitor	No Monitor
Live	$r = -.46^*$	$r = .04$
Video	$r = .17$	$r = .25$

*significant at the .05 level

The only significant correlation between recall and attitude change occurred in the LM condition yielding a negative relation of .46.

Perceived Source Position. Subjects were required to complete an attitude scale concerning chest X-rays as they thought the source of the communication would. The range of possible scores was from 4 to 60 with the lower number indicating the actual position advocated by the

source of the message. Table 4 reports the means for the four treatment groups.

TABLE 4
Means for Perceived Source Position

	Monitor	No Monitor	
Live	7.55	7.20	7.37
Video	8.45	11.55	10.00
	8.00	9.37	

Analysis of variance on these data yielded no significant F ratios indicating that perception of the source's position does not differ across the experimental groups. There is a trend, however, for subjects in the live conditions to see the source's position as more anti than in the video conditions.

Spearman rank order correlations within cells were performed between the subjects' postattitude and perceived source position. These correlations are reported in Table 5.

TABLE 5

Correlations Between Postattitude and
Perceived Source Position

	Monitor	No Monitor	
Live	.48*	.24	.36
Video	.62*	.64*	.63
	.55	.44	

* $p < .05$

As can be seen there were high positive correlations between attitude change and perceived source position in all but the L treatment group. This would seem to indicate that perception of the source's position is a contributing factor to final attitude.

Credibility Ratings of Source. One of the purposes of the study was to investigate the relation between source credibility as a function of mode of presentation. Accordingly, subjects were required to rate the source of the communication on a 1 to 9 scale with a higher number indicating greater credibility. They also completed a checklist which rated the source on the characteristics of intelligence, trustworthiness, and activity. The first credibility ratings are recorded in Table 6. A rating of 6 on this measure corresponds to the verbal designation, "I would consider his opinions as useful."

TABLE 6

Source Credibility as a Function of
Monitoring and Manner of Presentation

	Monitor	No Monitor	
Live	6.50	6.30	6.40
Video	5.45	6.55	6.00
	5.97	6.42	

Analysis of variance on these data indicated no significant effects across the four treatment groups.

Tables 7, 8, and 9 report the mean source evaluations for the characteristics of trustworthiness, intelligence, and activity respectively.

The scores in Table 7 are a combination of scales (1.) and (4.) which measure "respectfulness" and "trustworthiness," (i.e., sums were taken over the two scales for each S.) Likewise, Table 8 is a result of the combination of scales (2.) and (4.) which measured intelligence and expertness while Table 9 represents a combination of the two scales (5 and 6) which measure boldness and energy.

TABLE 7

Trustworthiness of Source as a Function of
Monitoring and Manner of Presentation

	Monitor	No Monitor	
Live	10.25	9.75	10.00
Video	9.60	9.75	9.67
	9.92	9.75	

TABLE 8

Intelligence of Source as a Function of
Monitoring and Manner of Presentation

	Monitor	No Monitor	
Live	9.30	8.70	9.00
Video	9.85	10.60	10.22
	9.57	9.65	

TABLE 9

Activity of Source as a Function of
Monitoring and Manner of Presentation

	Monitor	No Monitor	
Live	8.05	8.65	8.35
Video	8.40	8.15	8.27
	8.22	8.40	

Analysis of variance performed on the means in Tables 7 and 9 yielded insignificant F ratios indicating that perception of source or source evaluation did not vary on the dimensions of trustworthiness and activity as a function of treatment. Analysis of variance for the data in Table 8, however, did yield a significant F for manner of presentation ($F = 14.83$; $df = 1,76$, $p < .05$) indicating that the source was viewed as more intelligent and expert in the videotape conditions. No other effects were significant in the analysis of variance of expert ratings.

Spearman rank order correlations were computed for the relation between judgment of source's intelligence and expertness and final attitude change. These correlations are reported in Table 10.

TABLE 10

Correlations Between Source Intelligence
and Expertness, and Final Attitude

	Monitor	No Monitor	
Live	.46	.65	.55
Video	.51	.54	.52
	.48	.59	

All correlations between final attitude and judgment of source's intelligence are significantly ($p < .05$) positive suggesting that there is a strong degree of relationship between perceived intelligence and final attitude change.

CHAPTER IV

DISCUSSION

Attitude Change. Before considering the results in reference to the hypotheses, a comparison to another study which used the same message but a different medium should be considered. Johnson & Watkins (1971) performed an experiment in which a tape recorder was used to present the same message used in the current experiment. The dependent measure of attitude change consisted of items 2. and 4. on the attitude scale used in the present study. The reported mean attitude change score using this measure was 6.84 versus the overall mean of 4.87 for the study under consideration. It would seem, then, that in comparing these two studies, the manipulation consisting of a live source or his representation on videotape leads to greater attitude change than simply using an aural means of presentation.

Within the present study, the hypothesized results for attitude change suggested that a main effect for the factor of monitoring would be the result of the experimental manipulations. As noted in the results section, this main effect did not occur but rather a main effect for the

factor of presentation medium yielded a significant F ratio. The videotape conditions effected more attitude change toward the position in the message than did the live conditions. Two issues must therefore be discussed: (1) Why were the hypotheses concerning the factor of monitoring not confirmed? and (2) How can the obtained results of greater change to a videotaped source than to a live source be explained?

Although the difference between the monitor and no-monitor conditions was not significant, an inspection of the marginals in Table 1 indicates that the difference obtained was indeed in the predicted direction with more attitude change in the monitor conditions. The marginal mean for the live conditions was 22.65 whereas the marginal mean for the videotape conditions was 17.32. This trend is particularly evident when we consider only the videotape presentation cells. Here we find a difference of 3.65 points with the monitoring treatment effecting more attitude change than the no monitoring treatment. This trend virtually disappears, however, in the live presentation cells. Reviewing the experimental manipulations of the monitoring variable, one might conclude that the live treatment was somewhat "weaker" than the videotape treatment. In the videotape condition, the subjects who were being monitored had cameras focused on them and were told that the source of the message was watching them via an immediate playback in an adjoining room. In the live

condition, however, subjects were merely told that the source of the communication could see them through a glass pane. It is conceivable that the VM condition was perceived as more novel and possibly more arousing than the LM condition. Except for the intervening glass pane, this latter condition is really quite natural and approximates a standard lecture format. It is suggested that the physical manipulation of monitoring in the videotape condition was in some sense stronger or more effective than the verbal manipulation of monitoring in the live conditions (i.e., the physical presence of cameras and the subjects' knowledge that they were being viewed on another television by the source of the communication was more effective than the knowledge that the same source could view them through a glass pane). This apparent difference in the relative strengths of the two monitoring manipulations could conceivably explain the failure to confirm the hypothesis of a main effect for the factor of source monitoring. It is suggested that future research with this variable could obtain the predicted results if the manipulation of the monitoring variable in the live condition were strengthened.

A most surprising finding was that the videotape presentation effected more attitude change than the live presentations. This result runs directly counter to the results reported by Croft et al. who found more change using

a live source than a videotaped source. The data collected on evaluation of the communicator in this study would seem to suggest a possible explanation for this reversal. Results indicated that while there were no significant differences in source evaluation for the variables of trustworthiness and activity, there was a significant treatment difference associated with the variables of intelligence and expertness. Subjects who were exposed to the videotape communication judged him to be more expert and intelligent than subjects who were exposed to the live communicator. There was also a high positive correlation between judgment on this variable and final attitude change scores suggesting that perception of the source's expertness may be a possible mediator of attitude change. It is possible that subjects viewed the taped communicator more highly because of the aura of importance that is conveyed by viewing someone on videotape (i.e., subjects were conceivably more likely to think that Dr. Hoyt was more expert because in the videotape condition he was not available to them -- "He's a busy man and a tape had to be made of him." Subjects might infer that the tape was made because a man of his importance simply does not have the time to appear live). This interpretation, however, holds only for the V condition because the source in the VM condition is thought by the subjects to have the time to sit in the adjoining room to watch them. Using the same argument, it

is conceivable that subjects in the live conditions could doubt the expertness of a man who has the time to repeatedly deliver a message for a psychology experiment. It is suggested that the greater attitude change evidenced in the videotape conditions might be a function of the subjects' higher evaluation of the source's expertness relative to the live condition. This increased evaluation, in turn, is possibly related to the connotative meanings which the subjects may have attached to the videotaped presentations. Future research in this area might incorporate measures of the subjects' cognitive responses concerning the "meanings" or connotations they derive from the different types of message presentations.

Recall. The variable of recall was thought to be an indirect measure of subject attention to the content of the message. The following two findings, however, preclude using this variable as an explanation for the differing amounts of attitude change obtained: (1) Recall did not differ significantly for the four treatment groups. and (2) Correlations between recall scores and final attitude change scores were either non-significant or negative.

Perceived Source Position. Although the analysis of variance performed on the means for perceived source position yielded an insignificant F value, it is interesting to note that the trend was for subjects in the live conditions to perceive the source's position as more extreme than

the subjects in the video conditions (i.e., live subjects saw the communication as more anti than did video subjects). The pattern of attitude change, however, indicates that the greatest amount of change was evidenced by the video subjects, and that less change characterized the live subjects. This apparent inconsistency may be explicable in terms of degree of discrepancy and final change. It is possible that subjects in the video conditions changed more because they did not perceive the source's position as extreme as the live condition subjects did. It is possible that the live condition subjects were reacting to what they considered a "radical" position whereas the video subjects were reacting to a more moderate position.

Conclusions. Although the hypotheses of the study were not born out by significant differences among treatment groups, examination of certain trends in the attitude change data prompt the suggestion that the proposed monitoring variable may be of consequence when investigating the determinants of differential media impact. Succeeding studies concerned with this variable will have to develop a means of strengthening the monitoring manipulation in the live condition. If future research is able to clearly demonstrate the existence of monitoring, a number of variations of the present design might more clearly delineate its relation to attitude change. One such variation could manipulate the degree of monitoring by having the source vary the amount of eye-contact with his

audiences across conditions. If monitoring is correctly conceptualized as the amount of "surveillance" a source can maintain over his listeners, the prediction would be that attitude change will be a positive linear function of amount of eye-contact. Another possible methodological variation would be to design instruments which would tap the subjects' cognitive responses to the different modes of presentation. This modification would yield valuable data relevant to the proposition that videotaped communicators are perceived as possibly more expert and therefore more credible than live communicators.

Placing the results of the present study into McGuire's stochastic model discussed in the introduction enables one to draw a few tentative generalizations. A number of researchers have related various cues to the acceptance phase of the model. Croft et al. made the suggestion that color, three dimensionality, and fineness of facial features should lead to heightened communicator credibility and therefore more final attitude change. The results of the present study run counter to this explanation and suggest that these cues are probably not relevant to acceptance of a persuasive message. Alternatively, it has been suggested that perceived expertness of the source may have been an important mediator of acceptance of the message and ultimately of attitudinal change. Future research might further elucidate the complex

and subtle relationships that are thought to account for the underlying mechanisms of differential attitude change as a function of media presentation.

APPENDIX A

EVALUATION OF STATEMENT

This page is designed to allow you to evaluate the communication you just heard.

Place an "X" in the appropriate space on these seven-point scales. For example, if you feel that the statement was very good, you might place your "X" as shown below:

bad: : : : neutral: : : very: good

If you feel that the statement was very bad, you might place your "X" as shown below:

bad: X: _____: _____: neutral: _____: _____: very: good

Or you might feel that the evaluation should be somewhere in between, and you should place your "X" somewhere between the above "X's". Now please give us your true feelings about the following characteristics.

unclear : : : : : : : : clear

conclusive : : : : : : : : : inconclusive

plausible : : : : : : : : : implausible

authentic : : : : : : : fake

bad : _ : _ : _ : _ : _ : _ : good

informative : : : : : : : : uninformative

```
simple :__ :__ :__ :__ :__ :__ :__ : complex
```

boring : _ : _ : _ : _ : _ : _ : interesting

unknowledgeable :__ :__ :__ :__ :__ :__ :__ : knowledgeable

persuasive : : : : : : : : unpersuasive

relevant :__ :__ :__ :__ :__ :__ :__ : irrelevant

involving :__ :__ :__ :__ :__ :__ :__ : uninvolving

hot : : : : : : : : cold

invalid : : : : : : : : : valid

On this page we would like you to indicate your personal feelings about the truth of the statements listed below by circling the one number that best indicates your judgment of the truth of that statement. Notice that the larger the number, the more true the statement is judged; the smaller the number the more false it is judged.

Please respond to each of the four statements on this page by indicating your own personal opinion of the statement's truth. Answer the questions in the order presented, and do not skip any question. Work rapidly.

1. Everyone should get a chest X-ray each year in order to detect any possible TB (tuberculosis) symptoms at an early stage.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably	/	Definitely	/								
False		False				True				True				

2. Chest X-rays examinations for TB should be taken regularly and often.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably	/	Definitely	/								
False		False				True				True				

3. Even though one may not have any reason for suspecting TB, it is a good idea to have frequent chest X-ray examinations.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably	/	Definitely	/								
False		False				True				True				

4. All things considered, getting an annual chest X-ray for detecting TB is a very wise practice.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably	/	Definitely	/								
False		False				True				True				

On this page we would like you to indicate, on the basis of the message you have just heard, what you think the author's feelings about the truth of the statements concerning chest X-rays. Beneath each statement, there is a 15-point scale which ranges from "Definitely False" at the left to "Definitely True" at the right end of the scale. Respond by circling the one number that best indicates what you believe the author's judgment of the truth of that statement to be. Notice that the larger the number the more true the statement is judged; the smaller the number the more false it is judged.

Remember--please respond to each of the four statements on this page by indicating what you believe to be the author's personal opinion of the statement's truth; not your opinion. Answer the questions in the order presented, and do not skip any question. Work rapidly.

1. Everyone should get a chest X-ray each year in order to detect any possible TB (tuberculosis) symptoms at an early stage.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably/	Definitely/										
False		False						True					True	

2. Chest X-rays examinations for TB should be taken regularly and often.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably/	Definitely/										
False		False						True					True	

3. Even though one may not have any reason for suspecting TB, it is a good idea to have frequent chest X-ray examinations.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably/	Definitely/										
False		False						True					True	

4. All things considered, getting an annual chest X-ray for detecting TB is a very wise practice.

/ 1 /	2 /	3 /	4 /	5 /	6 /	7 /	8 /	9 /	10 /	11 /	12 /	13 /	14 /	15 /
Definitely/	Probably/	Uncertain/	Probably/	Definitely/										
False		False						True					True	

On the following pages you will be required to complete a number of sentences which have been taken from the talk you have just heard. Please fill in the blanks with the correct word or phrase. Try to be as accurate as possible.

1. A general increase in the number of cases of _____ has been reported as well as a general increase in the number of cases of _____.
2. It also has been pointed out that the average American is being exposed to more _____, including _____ from _____ for the detection of TB than ever before.
3. One major effect of frequent or large doses of _____ is on the _____ system.
4. Paradoxically, radiation can either _____ or _____ the cell count of the _____ or infection fighting cells.
5. With whole _____ radiation, there is considerable growth of the _____ which then dominate the other cells. This condition is called _____.
6. If the radiation exposure is specific to the _____ system, we have a decrease in the _____ count. This decrease can have two major detrimental effects. The first is a condition known as _____. The second effect is more frequent and is simply referred to as _____.
7. Exposure to radiation may have certain noxious effects on _____ tissue.
8. In the testes, the primitive cells which produce _____ are usually impaired first.
9. In the ovaries, the _____ do not reach maturity.
10. The effects described in questions 8. and 9. facilitate _____.
11. The increased number of birth defects reported in the United States is a direct function of _____ mutations and breakdown of the _____.
12. Considerable research has been done on X-ray exposure in lower animals with the result that _____.

mutations are quite _____.

13. The incidence of _____ tends to be restricted to those who have inadequate _____ and consequently cannot be considered a health threat to the _____.
14. A safer alternative to chest X-rays is the _____.
15. _____ should be taken as infrequently as possible and preferably not at all.

On this page we would like to know how competent you feel the person you just heard is to speak on the topic. Below are listed nine statements that range in order from completely incompetent to completely competent. Check the one statement that best expresses your feelings.

- ___ 1. I would consider him completely incompetent to render an opinion on this matter.
- ___ 2. I think this man knows very little about this topic.
- ___ 3. I would question the value of his opinion of this matter.
- ___ 4. I have some doubts about this person's competence on this matter.
- ___ 5. I believe the speaker is adequate but hardly an expert.
- ___ 6. I would consider his opinions as useful.
- ___ 7. I think this person has a good understanding of this topic.
- ___ 8. I feel that his excellence in this field makes his opinions very valuable.
- ___ 9. I would accept his judgment on this matter without question.

Below are listed some scales. On each scale check the space that best expresses your opinion about the person you just heard. Guess if you have to.

1.

extremely	somewhat	slightly	slightly	somewhat	extremely
untrust-	untrust-	untrust-	trust-	trust-	trust-
worthy	worthy	worthy	worthy	worthy	worthy
2.

extremely	somewhat	slightly	slightly	somewhat	extremely
intelli-	intelli-	intelli-	unintel-	unintel-	unintel-
gent	gent	gent	ligent	ligent	ligent
3.

extremely	somewhat	slightly	slightly	somewhat	extremely
ignorant	ignorant	ignorant	expert	expert	expert
4.

extremely	somewhat	slightly	slightly	somewhat	extremely
respect-	respect-	respect-	disre-	disre-	disre-
ful	ful	ful	spectful	spectful	spectful
5.

extremely	somewhat	slightly	slightly	somewhat	extremely
bold	bold	bold	timid	timid	timid
6.

extremely	somewhat	slightly	slightly	somewhat	extremely
energetic	energetic	energetic	tired	tired	tired

Anti X-ray Message

Health authorities have recently examined some of the basic tools of health diagnosis and made recommendations concerning the use of these tools. One such study has produced new information bearing on the question of radiation exposure. A general increase in the number of cases of leukemia has been reported as well as a general increase in the number of cases of sterility. It also has been pointed out that the average American is being exposed to more radiation, including radiation from chest X-rays for the detection of TB, than ever before. Let us examine some of the clinical evidence in more detail.

One major effect of frequent or large doses of radiation exposure is on the blood system. Paradoxically, this radiation can either increase or decrease the cell count of the leucocytes or infection fighting cells depending upon whether this radiation has been to the whole body or specifically to the blood system. With whole body radiation there is considerable growth of the leucocytes which then dominate the other cells. This condition is called leukemia. On the other hand, if the radiation exposure is specific to the blood system we have a decrease in the leucocyte count. This decrease can have two major detrimental effects. The first is a condition known as hemophilia. The

second effect is more frequent and is simply referred to as anemia.

Exposure to frequent radiation may have certain noxious effects on reproductive tissue. In the testes the primitive cells which produce spermatocytes are usually impaired first. In the ovaries the graffian follicles do not reach maturity. These latter two effects would, of course facilitate sterility. If total sterility is not accomplished the possibility arises of breakdown of the chromosomes. This latter effect, as well as the increase in the number of gene mutations, is directly responsible for the increased number of birth defects reported in the United States. Considerable research has been done on X-ray exposure in lower animals with the result that gene mutations are quite unpredictable.

The incidence of TB tends to be restricted to those who have inadequate diets and consequently cannot be considered a health threat to the general population. Recent discoveries have been made in tuberculosis diagnosis which allow safe, sure methods for detection. The skin test is one such method that is rapidly becoming popular. This particular test involves no radiation, is easy to administer, costs very little, and

is quite easy to interpret. This test is an example of the advances that medical science has made in the diagnosis of disease.

From the foregoing discussion, it can be seen that exposure to frequent radiation, including the small amounts of radiation present in the chest X-ray can be very dangerous to health. It can cause leukemia (blood cancer), sterility, or birth defects. There also seems to be no reason why a person should expose himself to the dangers of chest X-ray examination each year for the detection of TB. For one thing, TB is a rare disease, and besides this there are safer tests being used, such as the skin test. Based on this evidence it seems reasonable to state that people should not take chest X-ray examinations for the detection of TB each year. The examinations should be taken as infrequently as possible and preferably not at all.

APPENDIX B

TABLE 1

Overall Analysis of Variance Summary
for Attitude Change Scores

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Treatment	4	2977.85	25.58	.001
Error	95	116.4		

TABLE 2

Analysis of Variance Summary for
Attitude Change Scores

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	567.11	4.07	.05
M	1	70.31	.50	.10
PxM	1	63.01	.45	.10
error	76	139.35		

TABLE 3

Analysis of Variance Summary for Recall Scores

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	12.80	.047	.10
M	1	0.00	0.00	.10
PxM	1	336.20	1.24	.10
error	76	270.60		

TABLE 4

Analysis of Variance Summary for Credibility Ratings

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	3.20	1.12	.10
M	1	4.05	1.55	.10
PxM	1	8.45	3.22	.10
error	76	2.62		

TABLE 5

Analysis of Variance for Perceived Source Position

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	137.81	2.42	.10
M	1	37.81	.66	.10
PxM	1	59.51	1.04	.10
error	76	56.87		

TABLE 6

Analysis of Variance for Trustworthiness of Source

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	2.11	1.41	.05
M	1	.61	.40	.10
PxM	1	2.11	1.41	.10
error	76	1.50		

TABLE 7

Analysis of Variance for Intelligence of Source

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	30.0	14.83	.05
M	1	.11	0.05	.10
PxM	1	9.11	4.50	.10
error	76	2.02		

TABLE 8

Analysis of Variance for Activity of Source

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
P	1	.11	.04	.10
M	1	.61	.23	.10
PxM	1	3.61	1.38	.10
error	76	2.62		

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APPROVAL SHEET

The Thesis submitted by Thomas A. Watkins has been read and approved by members of the Department of Psychology.

The final copies have been examined by the director of the Thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the Thesis is now given final approval with reference to content and form.

The Thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

May 22, 1972
Date

James H. Johnson, Ph.D.
Signature of Director